4.   (Amended)   An apparatus according to [any one of] claim[s] 1 [to 3], wherein said secret information is a private key for decrypting or forming a digital signature in a public key encryption technique.

5.   (Amended)   An apparatus according to [any one of] claim[s] 1 [to 4], wherein said arithmetic operation processing circuit executes said converting means at a predetermined timing.

8.   (Amended)   A program according to claim 6 [or 7], further comprising converting means for converting said secret information forming information into another secret information forming information,

and wherein said processing program of secret information outputs the same processing result as said processing result by using said another secret information forming information.

9.   (Amended)   A processing system of secret information for transmitting and receiving the processing result by using said secret information by using a processing apparatus of secret information according to [any one of] claim[s] 1 [to 5],

wherein an apparatus on a receiver side of said processing result has means for setting said secret